



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: T-4358

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2017-06-01-06 Date: 05-06-17
 Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
 Address : Byatarayanapura Sub division, BBMP, Bangalore.
 Project Name : Providing street sign boards to main and cross roads of Kodigehalli in Ward no.08.
 Agency : Executive Engineer, KRIDL, #280, 59 cross road, 17th 'C' main road, 3rd 'Y' block, Rajajinagara, Bangalore-560010.
 Customer's Reference : BBMP/EE/BTP/WO/27/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 01-06-17
 Sample ID No : 2017-06-01-06/01
 Sample Type : Birla Super 53grade
 Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
 IS 4031 (Part 1,2 3,4,5, 6,11):1988
 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
 IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6
 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
 IS 4031 Part 11, DETERMINATION OF DENSITY , Clause 6
 Date of test : 02-06-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.85	—
2	Fineness by Air permeability method (m ² /kg, Min)	275.5	225m ² /kg, Min
3	Density (gm/cc)	3.1	—
4	Standard Consistency (%)	28.0%	Not specified
5	Initial Setting time	185 minutes	Not less than 30 minutes
6	Final Setting time	250 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1mm	Not more than 10 mm

Note:

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 Samples will be disposed after 30 days from the date of issue of test certificate

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R. Karthik Rechan

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 Authorized Signatory
 Quality Manager



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: T-4358

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2017-06-01-06 Date: 30-06-17

Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.

Address : Byatarayanapura Sub division, BBMP, Bangalore.

Project Name : Providing street sign boards to main and cross roads of Kodigehalli in Ward no.08.

Agency : Executive Engineer, KRIDL, #280, 59 cross road, 17th 'C' main road, 3rd 'Y' block, Rajajinagara, Bangalore-560010.

Customer's Reference : BBMP/EE/BTP/WO/27/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 01-06-17

Sample ID No : 2017-06-01-06/01

Sample Type : Birla Super 53grade

Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 6, Determination of Compressive Strength, Clause 6

Date of test : 02-06-17

Compressive Strength			
Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	29.5N/mm ²	Not less than 27 N/mm ²
2	7 Days	38.5N/mm ²	Not less than 37 N/mm ²
3	28 Days	54.5N/mm ²	Not less than 53 N/mm ²

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: T- 4358

TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2017-06-01-06 **Date:** 05-06-17
Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
Address : Byatarayanapura Sub division, BBMP, Bangalore.
Project Name : Providing street sign boards to main and cross roads of Kodigehalli in Ward no.08.
Agency : Executive Engineer, KRIDL, #280, 59 cross road, 17th 'C' main road, 3rd 'Y' block, Rajajinagara, Bangalore-560010.
Customer Reference : BBMP/EE/BTP/WO/27/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 01-06-17
Sample ID No : 2017-06-01-06/02
Sample Type/ Size : 20mm down size coarse aggregate
Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties
Date of test : 01-06-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	277	277	5.5	94.5	90-100
3	10 mm	2600	2877	57.5	42.5	25-55
4	4.75 mm	2040	4917	98.3	1.7	0-10
5	Pan	83	5000	100	0	-

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2017-06-01-06

Date: 05-06-17

Sample ID No : 2017-06-01-06/02

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.8	
3	Specific Gravity	2.68	—
4	Bulk Density(Loose) (Kg/l)	1.56	—
5	Bulk Density(Compacted) (Kg/l)	1.59	—
6	Water Absorption(%)	0.24	—
7	Aggregate crushing Value(%)	23.6	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.8	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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R KARTHIK RECHAN

Authorized Signature

Quality Manager

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: T- 4358

TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2017-06-01-06 Date: 05-06-17
 Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
 Address : Byatarayanapura Sub division, BBMP, Bangalore.
 Project Name : Providing street sign boards to main and cross roads of Kodigehalli in Ward no.08.
 Agency : Executive Engineer, KRIDL, #280, 59 cross road, 17th 'C' main road, 3rd 'Y' block, Rajajinagara, Bangalore-560010.
 Customer's Reference : BBMP/EE/BTP/WO/27/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 01-06-17
 Sample ID No : 2017-06-01-06/03
 Sample Type : Fine Aggregate
 Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
 IS: 2386 :1963(Part - 1, 3) RA2012
 IS 2386 Part 1: Particle Size and Shape
 IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
 Date of test : 01-05-17

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	133	133	13.3	86.7	90-100	90-100	90-100	95-100
3	2.36 mm	189	322	32.2	67.8	60-95	75-100	85-100	95-100
4	1.18 mm	100	422	42.2	57.8	30-70	55-90	75-100	90-100
5	600 micron	180	602	60.2	39.8	15-34	35-59	60-79	80-100
6	300 micron	197	799	79.9	20.1	5-20	8-30	12-40	15-50
7	150 micron	104	903	90.3	9.7	0-10	0-10	0-10	0-15
8	Pan	97	1000	100.0	0.0	---	---	---	---

Result : The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2017-06-01-06

Date: 05-06-17

Sample ID No : 2017-06-01-06/03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.89	—
2	Specific Gravity	2.56	—
3	Material finer than 75 micron(%)	5.35	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Handwritten signature of R. Karthik Rechan

R KARTHIK RECHAN

Authorized Signatory

Quality Manager

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: T-4358

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2017-06-12-10 Date: 14/06/2017

Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.

Address : Byatarayanapura Sub division, BBMP, Bangalore.

Project Name : Providing street sign boards to main and cross roads of Kodigehalli in Ward no.08.

Agency : Executive Engineer, KRIDL, #280, 59 cross road, 17th 'C' main road, 3rd 'Y' block, Rajajinagara, Bangalore-560010.

Customer's Reference : BBMP/EE/BTP/WO/27/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-06-17

Sample ID No : 2017-06-12-10/01

Customer ID : M20 Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 14/06/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	M20 Concrete	M20	07/06/2017	14/06/2017	150.23 X 150.26 X 150.22	22574	8.241	392.8	17.4	17.5
2	M20 Concrete	M20	07/06/2017	14/06/2017	150.21 X 150.25 X 150.23	22569	8.256	404.0	17.9	
3	M20 Concrete	M20	07/06/2017	14/06/2017	150.22 X 150.21 X 150.28	22565	8.293	390.4	17.3	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2017-06-12-10 Date: 05/07/2017

Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.

Address : Byatarayanapura Sub division, BBMP, Bangalore.

Project Name : Providing street sign boards to main and cross roads of Kodigehalli in Ward no.08.

Agency : Executive Engineer, KRIDL, #280, 59 cross road, 17th 'C' main road, 3rd 'Y' block, Rajajinagara, Bangalore-560010.

Customer's Reference : BBMP/EE/BTP/WO/27/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-06-17

Sample ID No : 2017-06-12-10/02

Customer ID : M20 Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 05/07/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	M20 Concrete	M20	07/06/2017	05/07/2017	151.15 X 149.22 X 150.21	22555	8.215	512.0	22.7	22.9
2	M20 Concrete	M20	07/06/2017	05/07/2017	150.21 X 148.22 X 149.10	22264	8.244	514.3	23.1	
3	M20 Concrete	M20	07/06/2017	05/07/2017	150.22 X 149.29 X 150.23	22426	8.213	513.6	22.9	

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Authorized Signatory
Quality Manager